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ABSTRACT

This paper contributes to the debate over whether the university disciplines are the best sources of knowledge for the school curriculum. Among the problematic issues raised in the paper are the distinctions between the university disciplines on one hand and the arts, crafts, trades, and sports on the other, and the distinction between enabling the young to participate at a practical level in the activities of adult society and developing their ability to participate on a more abstract, theoretical level in formal fields of inquiry. Although examination of these issues raises doubts about the possibility of developing a general theory of knowledge, each domain of knowledge has three characteristics in common: (1) a theoretical framework; (2) a means for making perceptual contact with things in the world; and (3) a set of formulated canons of inquiry. If general education should include study of seven aspects of the world (the written, quantified, play, fabricated, natural, societal, and lived worlds), then both the university disciplines and the arts, crafts, trades, and sports must be integral parts of education, and neither the formal nor the practical can be shown to be epistemically preferable. Two pages of references and notes are provided. (PGD)

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THE EPISTEMIC BASIS OF FORMAL EDUCATION

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The Epistemic Basis of Formal Education

Donald Vandenberg

The recent debate about the'"forms of knowledge" is merely the current version of a controversy that has existed most of this century and may be inherent in the attempt to offer universal education in public schools. It is whether the university disciplines are the best sources of knowledge for the school curriculum. This paper is a contribution to that debate, although it will not join issue in the terms in which it has been discussed because its participants seem to commit a category mistake. This is intimated in the recent contribution to it by Jim Mackenzie, who ended his paper with a number of illuminating remarks, two of which are worthy of present attention.[1] One is made by direct quotation of the main protagonist of the "forms of knowledge" thesis, Paul Hirst, who said that from his epistemology, it does not "follow that a curriculum must or ought to be divided into subjects that mirror distinctions in the forms of knowledge."[2] This implies that the university disciplines are the proper sources of knowledge for the school curriculum but their epistemic characteristics are not the appropriate—or exclusive—criteria for the selection and organization of knowledge in the curriculum. This makes the role of his epistemological distinctions in the development of educational theory quite unclear and suggests he may have made a category mistake by formulating them. The second point from Mackenzie's conclusion that is worthy of attention is that not all the knowledge taught in the schools comes from the university disciplines. Their epistemic characteristics are not appropriate "to learning the execution of the backhand volley, the operation of a lathe, or the skills of the keyboard."[3] This is a telling point only if one believes that

tennis (or sports in general), metal- and wood-working (or the crafts and trades in general), and piano (or the arts in general) should be in the school curriculum along with, or instead of, the knowledge from the academic disciplines. It seems that one should accept that the arts, crafts, trades and sports also belong in the school curriculum, but Mackenzie does not tell us why. Nor will normal epistemology or philosophy of science prove very illuminating if they are consulted to find out why the kind of knowledge contained in the arts, crafts, trades and sports should warrant their inclusion in the school curriculum.

The distinction between "knowing how" and "knowing that" might be trotted out were one inclined to ape a certain style of doing educational theory in vogue some twenty years ago, but this would still commit the category mistake, and perhaps what Jane Roland Martin called the "epistemological fallacy," if it argues "from a theory of knowledge to conclusions about the full range of what ought or ought not be taught or studied."[4] It may be more appropriate to go the other way, from a conviction that the arts, crafts, trades and sports are based upon some kind of knowledge and that it is incumbent upon educational theory to ascertain the nature of their kind or kinds of knowledge and its role in the educative development of young people. Perhaps the approach should not be unlike that stated by John Dewey in 1944 in The Problems of Men when he said,

> The legitimate subject-matter of a theory of knowledge consists of facts that are known at a given time, with, of course, the proviso that the procedures by which this body of knowledge has been built up are an integral part of it. This view of the grounds of a competent theory of knowledge stands in open opposition to that which underlies the epistemological theory: the postulate, namely, that no subject-matter is entitled to be called knowledge until it has been shown to satisfy conditions that are laid down

> prior to any case of actual knowledge and independently of any conclusion reached in the course of the inquiries by which knowledge in the concrete is arrived at.[5]

Without digressing to prove it, it can be claimed that the "forms of knowledge" debate has been carried on within the framework of what Dewey called "epistemological theory" in this statement, i. e., within the framework of prescriptive, programmatic and a priori conceptions of what knowledge ought to be like. It does not start out with the "facts that are known at a given time" in order to theorize about the conditions under which this body of established knowledge has been discovered. It is over-distanced from the facts known by the various and sundry university disciplines, all of which are ordinarily thought to be branches of knowledge. It would be an error, it seems, to revive Dewey's own theory of knowledge, but the point is that to come to grips with what is at issue in the "forms of knowledge" debate, one should take some advice from Husserl and put the epistemological theories into brackets in an effort to return to the things themselves. Mackenzie did this briefly by closing his paper with the reference to learning to return a backhand volley, run a lathe, and make music with a keyboard.

On the way to the things themselves, however, it would be useful to refer to the first chapter of Democracy and Education, where Dewey suggested that education is tantamount to what sociologists and anthropologists call "socialization" and "enculturation," respectively. It is the process whereby the young learn to engage in the activities of the adult members of their society. Deliberate or formal education is necessary only when the activities of adults become too complex to be learned informally, which is when the culture becomes so complex it is "stored in symbols," as it were. The symbol systems, etc., virtually require formal education to enable the young to gain access to the culture and thereby learn how to engage in the activities of the adults in their society.[6]

If one accepts that the aim of schooling is to enable the young to participate in the activities of adult society, then one is no longer primarily interested in establishing the content of the so-called liberal education necessary to develop the so-called educated person. One is concerned instead with the knowledge that is used in society in those activities in which the young are enjoined to participate. One is concerned with ascertaining the knowledge that will be generally useful to all adults, i.e., with the content of common, general education. One would want to begin with what is known by the qualified experts in the various activities of adult society, for the knowledge and skills that belong in the school curriculum become those of the adult society that are needed to maintain the existence of the adult activities that are considered valuable and/or necessary to maintain the specific society in existence and that are unlikely to be acquired without institutionalized processes of deliberate learning and teaching.

The knowledge stored in written symbols that requires formal education to be transmitted and acquired, however, has not merely become complex. It has become epistemically refined by the adult activities within which it has its natural being. Perhaps only those adult activities that have accumulated techniques and methods for refining their knowledge and skills have also accumulated the symbolic culture that requires formal instruction and study for its transmission and acquisition. Formal education does not transmit the culture, but the refined culture, the epistemically refined culture. The knowledge and skills available in society and eligible for inclusion in the school curriculum are therefore those of the arts, crafts, trades, sports, professions, and university disciplines that are important to the society. The acronym ACTS will be used hereafter to refer to the Arts, Crafts, Trades and Sports, and the word "discipline" will refer to all the sciences, fields of study, and professional programs that are housed in university departments of learning.

A balanced concern for the knowledge and skills of the ACTS and disciplines, i.e., for both practical and theoretical knowledge, seems educationally important. Not only do standard epistemologies betray an ideological preference for one or the other, so do political parties. The necessary effort to be descriptive, or "objective," makes it unseemly to express a preference for either practical or theoretical knowledge, at least in a premature or preconceived way. Such a preference is not intended in the observation that societies have schools for the deliberate learning and teaching of the knowledge and skills needed in the adult activities important to society that have become too complex to acquire and transmit informally. This means only that the only knowledge and skills available in society that are eligible for inclusion in the school curriculum because of their epistemic characteristics are those of the ACTS and disciplines.

The reason for this is that each of the ACTS and disciplines comprises a community of critical experts who confirm the validity and truth of the knowledge and skills within their jurisdiction. These experts employ standards of excellence and canons of inquiry to communicate knowledge and skills to other experts within the domain in an attempt to have them accepted by the other experts. Their knowledge is therefore objective in the sense of being intersubjectively valid, and it is true in the sense of disclosing something about things in the world. The standards of excellence and canons of inquiry appear to be partly unique to the particular ACTS or discipline because they are adapted to the aim and features of the ACTS and to the range of things investigated by the discipline. If the criteria of excellence and the canons of inquiry are domain-specific, as they seem to be, then there is no one method that can be called the method of knowing or the scientific method. This makes no difference to the educational problem, however, beyond making it necessary to conclude that each of the ACTS and disciplines has knowledge and skills that are

eligible for inclusion in the curriculum because each possesses its own body of qualified practitioners or qualified investigators to ascertain the truth of the knowledge and value of the skills within it. It means, simply, that the final authority regarding the validity of curricular content is the community of experts or qualified investigators within a particular ACTS or discipline.

It was the 19th Century American pragmatist, Charles Sanders Peirce, who first called attention to the importance of the community of qualified investigators in the discovery of knowledge.[7] Peirce assumed, however, that there was only one community of qualified investigators, that of the hard sciences. This resulted from taking his own field, physics, as the exemplar of the best knowledge and then simply claiming that its experimental methods of inquiry were the only proper methods for all disciplines, and even for the ACTS, as if physics were somehow more scientific than other disciplines. It may very well be more exact, and more rigorous, than others, but it is simply nonsense to claim that any one of the special sciences or disciplines is more scientific than others. It is probably true that all the knowledge of the social sciences and humanities has to be compatible with the knowledge of the natural sciences, but this does not mean that the methods of inquiry used in the discovery of that knowledge are the proper methods of inquiry in the social sciences, humanities, or the ACTS. This issue is resolved, however, if instead of thinking of a community of investigators as Peirce did, one pluralizes the notion and thinks of a community of investigators in each of the ACTS and disciplines.

If in the discovery of knowledge and truth the methods and canons of inquiry should be the most appropriate ones for the investigation of the things within the discipline, then only the experts within a domain are sufficiently knowledgeable about the things within the domain, and about their characteristics, to be able to make a fair judgement

about what these methods are and should be. It follows that no one is qualified to claim that the methods and canons of inquiry are not domain-specific. This is a negative proof of the claim that methods of research ought to be domain-specific in order to be appropriate to the characteristics of the phenomena within a domain.

It is therefore not clear how anyone can become qualified to formulate a general theory of knowledge or science that purports to apply to all the ACTS and disciplines. On the other hand, it is clear that any such attempt should be very general, with blanks in it to allow for the details to be filled in by the experts within each of the ACTS and discplines.

With this proviso, it may be possible to indicate that each of the ACTS and disciplines has three characteristics that allow it to accumulate knowledge and skills. First is a theoretical framework comprising a specialized vocabulary, set of concepts, and conceptual schemata that allow the practitioners and qualified experts to communicate with each other about the things in their domain and to accept and reject each other's claims to knowledge. Some of the difficulty in the "forms of knowledge" debate can be avoided by observing that the logic appropriate to this conceptual consciousness of the things in the domain is also domain-specific.

Second is a means for making perceptual contact with the things in the world, such as observation, experimentation, practice, personal experience, or some such. The means for achieving a perceptual consciousness of the things in the domain is also domain-specific. Regardless of its mode, perceptual awareness furnishes evidence for conceptualized theorizing, just as conceptual awareness furnishes evidence for perceptual articulation and discrimination.

The third element is the techniques, methods, standards of excellence and canons of inquiry that insure that there is a reciprocating influence between the conceptual and perceptual consciousnesses of the thing to

enable them to enrich and correct each other in the general direction of truth-making.

In other words, the knowledge and skills in the ACTS and disciplines comprises conceptual and perceptual awareness of something in the world. It becomes epistemically refined by the domain-specific canons and methods of inquiry and action that allow for communication between experts, on the one hand, and for reciprocity between conceptual and perceptual awarenesses, on the other.

The knowledge and skills of the ACTS is less conceptual and more perceptual and bodily than that of the disciplines. They are, after all, practical activities engaged in to create some object or to perform some action, not to acquire knowledge or skill. They are guided largely by practical knowledge, although they are not devoid of theoretical knowledge in modern society.

The knowledge of the disciplines is more theoretical, conceptual and cerebral because they are indeed engaged in to maintain, transmit and discover knowledge and skills. Some disciplines, in turn, are more conceptual, while others are more perceptual. It depends upon the perceptual availability of the evidence about the things in the domain.

To say that the methods and canons of inquiry are domain-specific, then, means that it requires expertise within a domain to ascertain how theoretical and conceptual the knowledge in it should be, how practical and perceptual it should be, and how these two should be interrelated through some methodology to insure that findings are intersubjectively valid and true.

Unless the knowledge and skills are epistemically refined by standards of excellence and canons and methods of inquiry, however, they do not require the institutionalization of learning for their tranmission and acquisition. They can be learned informally. It follows that the only knowledge and skills that belong in the school curriculum are those of

already constituted ACTS and disciplines. It is not obligatory for them to be in the curriculum. Nor is it obligatory for their knowledge to be organized into school subjects that resemble the ACTS and disciplines. This may very well be the best pattern, for all I know, but the point is more general. It is that the ACTS and disciplines are the only sources of knowledge and skills that are good enough as knowledge and skills to be worthy of inclusion in the curriculum. There are no other sources of warranted knowledge in society. They are not to be included in the curriculum because of their epistemic characteristics, moreover, but because they are needed to engage in the activities of adults in one's own society.

To educate the young to engage in the activities of adults in an advanced industrial society requires that the specialized knowledge needed for gainful employment be based upon an earlier common, general education designed to help the young explore things in the world they have to know something about to live a contextualized, meaningful life as an adult. The curriculum should facilitate their exploration of the things in the world that occurs in their play activities by supplying conceptual schemes drawn from the ACTS and disciplines that enable them to become aware of those things in a more disciplined manner than would occur in ordinary experience. When educational events arise naturally out of the explorations of the things in the world in order to become more richly aware of them, they enable the conceptual patterns of the curriculum to mesh into the things in the perceptual world of students. For example, the young should explore the things in the natural world and in the social world, and to each sub-world they should explore, there is a corresponding ACTS or discipline from which concepts and schemata can be drawn to enable the exploration of the things in that region of the world to be more disciplined and truthful than it would otherwise be.

It seems that common, general education should include the study of the most important things in the major regions of the world. It should therefore include the study of things in the written world, the quantified world, the play world, the fabricated world, the natural world, the societal world, and the lived-world. Each of these seven categories involves a distinct mode of access to the things located in the respective region of the world. These modes of access are distinct modes of becoming aware of the things in the respective region, or different modes of knowing. It seems they might nurture different intellectual powers as the conceptual schemata or skills come to structure one's conscious awareness of the things within the specific region of the world, but the goal of common, general education is not to develop these powers. It does not depend upon whether there are domain-specific modes of knowing, for the purpose of common, general education is to give the young equal access to the world.

Most of the modern world is not accessible except to literate, numerate people. It is necessary to gain access to the world through literacy and numeracy to engage in adult activities in the modern world. For example, one has to read the newspaper with critical understanding to be able to interpret, evaluate and participate intelligently in the on-going life of society. Similarly, general education should insure that everyone learns at least one art, craft or trade exclusive of one's vocation, and at least one sport or the dance, to assist in the exploration of things in the fabricated world and play world, and, more importantly, to gain access to the world through manual, bodily modes of knowing. It seems especially important if one is not going to practice an art, craft or trade as one's vocation to learn one to a degree necessary to practice it as a life-long hobby or artistic skill because through it one gains a solid grasp on the world through one's hands that enables one to know the world and feel secure within it in an irreplaceable way. 12

It also lets one value the contribution to society made by people who work with their hands. Similarly, a reasonable level of achievement in sport or the dance enables one to come to know the world through a full, bodily immersion in it that yields a holistic, bodily grasp on the world and that gives one confidence in oneself in one's bodily undertakings in the world. These manual and bodily learnings enlarge one's lived-space, increasing its mobility and one's willingness to undertake new practical activities with positive feelings regarding the probability of success. There is little doubt that making things and playing have great human, existential significance.

The importance of these first four categories is characteristically underestimated by intellectualistic theories of knowledge and education. The skills involved are often considered to be habits or unconscious behaviours. To the contrary, one is not only perceptually aware of what one is doing within them, one can be more wide awake than within theoretical endeavors. It would be easy to show, furthermore, that all knowledge has its origins in bodily handlings of things and is dependent upon bodily involvement with the world. Conceptual, intellectual consciousness is thoroughly embodied and dependent upon things in the world for its intelligible content.

On the other hand, so, too, should one avoid a practicalistic ideology of knowledge out of truthful fairness to conceptualized, theoretical modes of knowing. It should not be forgotten that reading, mathematics, and the ACTS have a place in schools only because they have theoretical aspects customarily stored in symbols that makes them difficult to learn informally. The intellectual curriculum, however, comprises the last three categories: things in nature, society, and the lived-world, to be disclosed with concepts drawn from the natural sciences, social sciences, and humanities, respectively.

The primary goal of common, general education within the intellectual curriculum is also to give equal access to the things of the world, but here it is equal cognitive access. As the child or youth explores the physical world, the animal world, the plant world, and so on, it becomes aware of physical things, living things, growing things, celestial things, and so on. Because the natural world provides all the resources that sustain human life, much adult activity is dependent upon the epistemically refined knowledge of the things in nature that the child or non-schooled adult knows only as common sense objects. One's access to things in the natural world is greatly increased and disciplined by the methodology and conceptual schemata of the natural sciences. These enable one to gain a generally truthful picture of reality, i.e., an image of the solar system as several billion years old, of the planets revolving around the sun, aware that the constellations of astrology do not exist (and that UFO's do not, either), cognizant that living things and non-living things exist in dynamic interplay because the former evolved through adaptation to the latter, aware that nutrition is a bio-chemical process that can be guided by knowledge to promote health and well-being, knowing that medical science based upon the natural sciences is very different from sorcery and shamanism, and so on.

Similarly, the child or youth becomes aware of the things in the social world through untutored experience, but the moral agency of adulthood in a liberal democracy requires one to know about the economic, political, legal, and social institutions of one's society. Part of general education should therefore enable the young to gain a disciplined, conceptual access to the things in the economic world, political world, civil world, and the social world, such as the market, unemployment as a general social phenomena, inflation, representative government, political parties, civil and criminal law, the court system, and so on. Only the disciplined study of major phenomena, or institutions, in one's own

society can enable one to integrate oneself into society and function fully as a moral agent and participating citizen.

Finally, one gains a disciplined access to the lived-world, or human world, through poetry, literature, drama, music, history, ethics, religion, and philosophy. Through the conceptualizations of the humanities one becomes aware of the things in the lived-world in sensitively articulated ways, i.e., of love, suffering, jealousy, conquest, adventure, mystery, cultural and scientific inventions, catastrophes, revolutions, the struggle between good and evil, human hopes and aspirations, and human tragedy. This understanding helps bring order and significance to one's own feelings, fears, hopes and aspirations. It brings order and significance to one's own being.

Although each of the natural and social sciences and humanities has its own mode of access to the things in its region of the world, all of these modes of knowing cannot be included in a finite program of general education. Acquiring the method of inquiry is less important within the intellectual curriculum, moreover, because what is important to common, general education is that it supplies knowledge about the world. It is neither "knowing that" nor "knowing how" but "knowing about" things that is crucial. To avoid reifying knowledge, this knowledge about the world should be organized so that the things in the natural, societal and human worlds that the young become aware of in common sense experience are studied in disciplined ways in schools to establish a progressive enlargement and deepening of their lived-world, of their perceptual reality. What is important in common, general education is that students become more deeply aware of more things in the world in a more truthful manner that progressively increases their conscious contact with the world. It is not to prepare people for a vocation or tertiary schooling. Nor is it to acquire knowledge for its own sake. The purpose of common, general education is to give people equal access to the things in the world by

employing the conceptual patterns drawn from the ACTS and disciplines to make more and better sense out of them than would otherwise occur.

This view of the role of knowledge in education differs sharply from two views that strongly emphasize the development of patterns of thinking similar to the way the experts in the disciplines allegedly think. The advocates of the "forms of knowledge" and "liberal education" commit the intellectualistic fallacy, for they overlook the importance of the practical knowledge of the ACTS in adult social life and favor academically able students unduly because the emphasis upon thinking within the conceptual structures of the disciplines makes instruction so rigorous it leaves nothing for less able students, who find the disciplines taught this way uninteresting and irrelevant because the concepts do not relate to things in the perceptual world. Dewey's view, on the other hand, commits the practicalistic, anti-intellectual fallacy, because the abstraction of problem-solving from the experimental sciences overlooks the importance of the theoretical aspects of the natural sciences and the knowledge already accumulated in the disciplines, particularly the way in which settled knowledge is used in life to understand, interpret and make sense out of the things one perceives that are beyond the range of problem-solving techniques. The "forms of knowledge" view is incompatible with common education, and Deweyan progressivism is incompatible with general education.

Both of these views formulate a theory of knowledge and how it is allegedly discovered by experts on the frontiers, then apply this fictional method of discovery to classroom practice. It would seem that they are over-committed to views of traditional and progressive pedagogy, however, and that they let these partisan preferences corrupt their views of the intellectual content of the curriculum.

Instead of considering the ways in which new knowledge is allegedly discovered and applying this to the classroom as if mature researchers

had not discovered and accumulated a body of knowledge with their highly touted method, it is less ideological to consider the way in which knowledge and skills are actually used in society by people who are not experts in the ACTS and disciplines but who have acquired some of their knowledge as part of their general education. It is mostly accepted on authority and used to make sense out of things. Most people do not use the knowledge acquired in schools to solve problems in their adult lives nor to think like the experts in the disciplines. They do not use it by recall of isolated facts, either, but to interpret and understand things, to make sense out of the world.

This is not to deny that classrooms should be conducted under wholesome epistemic conditions, just as they should be conducted under wholesome moral and emotional conditions. The wholesome epistemic conditions necessary, however, are that the concepts and conceptual schemes of the ACTS and disciplines are learned in ways that always connect them with things in the perceptual world. The methods and techniques that the experts in the ACTS and disciplines use to insure that conceptual consciousness and perceptual consciousness of things enrich and correct each other are not so important pedagogically as the interaction between the perceptual and conceptual awareness of things one is learning about. If the pedagogy of the classroom enables students to make sense out of perceived things with the help of the concepts and schema drawn from the disciplines, they are engaging in the important aspects of thinking involved in gaining knowledge about the world. To pursue this further would require a domain-specific phenomenological description of how, within an ACTS or discipline, the basic concepts are related to the most important phenomena within the domain. One wants to know about the processes of consciousness that enable the experts to be consciously aware of things in their domain, for the teacher's task is to enable students to become aware of them in the same way.

This requires domain-specific phenomenological research, which itself requires expertise and teaching experience within the respective ACTS or discipline. What can be said in general is that the perceptual and conceptual consciousness of the things should coincide in their disciplined study. Otherwise the conceptual learnings will become learned verbally, without understanding or insight, because of the alienation from the things in the world. The symbol system within which they are expressed will become reified and learned as a free-floating set of words, truthlessly.

It has already been said that the knowledge in some domains is more conceptual; in others, more perceptual. The valid epistemic relation between perceptual and conceptual awareness of something in pedagogy is probably also lesson-specific. Within any subject, one lesson might be more perceptual, another, more conceptual. It depends upon the specific item of knowledge, the students' experiential background, and the way in which the specific teacher is able to open the thing up.

It will set things into perspective to contrast the practical knowledge of the ACTS with the theoretical knowledge of an art, craft or trade that a craftsman may lack. For example, the automechanic ordinarily lacks the knowledge of the automotive engineer. The engineer can do everything the mechanic can do, but the mechanic cannot do all that the engineer can do because he lacks the conceptual awareness of the physics, calculus and other university disciplines the engineer uses to design a new car. One prefers to have the experienced mechanic repair one's car, especially if it requires trouble-shooting to locate the problem, for he or she has built up a rich, perceptual and bodily knowledge of how to locate and repair such problems, which the engineer lacks. Regardless of how well the mechanic can conceptualize things related to this work, however, the theoretical knowledge necessary to design a new car is lacking. His or her technical knowledge is superior to that of the engineer, but the engineer's theoretical knowledge is technologically superior to the

mechanic's knowledge. The question then is whether the engineer's knowledge is epistemically superior. If it is more valuable to society, is it because of its epistemic qualities or its technological uses? Or is it more valuable due to the fact it requires more time and effort to acquire it? Would anyone undertake the schooling necessary if working as an automechanic paid as well as engineering?

This contrast occurs between the electrician and electrical engineer, between the contractor and civil engineer, between the nurse and doctor, the stenographer and executive secretary, the bookkeeper and certified public accountant, the draftsman and the architect, and so on. In each case the knowledge of the former is superior in regard to the refinement of perceptual, bodily awareness of things involved in the activity. In each case, too, the knowledge of the latter is superior in respect to depth and breadth of conceptual understanding, which takes a longer period of school to develop. In each case, finally, the latter could teach the former how to do the former's job, but this cannot be reversed.

There are, furthermore, varying degrees of excellence in the ACTS as well as in the professions and disciplines. There are world-class hair dressers, cabinet makers, chefs, and so on, even world-class auto-mechanics (who work for race-car drivers). Although such excellence is recognized by its product or performance, its existence depends upon a high grade intelligence and superior knowledge at the perceptual and bodily levels. This fact should prevent hasty claims that the theoretical knowledge of the disciplines is inherently more valuable than the practical knowledge of the ACTS.

On the other hand, it does seem that the theoretical knowledge of the professions and disciplines is epistemically superior because it is more conceptually complex, more abstract, more testable, more broadly applicable, and more communicable among more highly qualified groups of investigators who specialize in the discovery and refinement of knowledge.

These epistemic qualities of theoretical knowledge do not, however, make the people who can acquire it into better people. That is a question of moral character.

Another important point is that as one of the arts, crafts or trades becomes intellectually sophisticated, it becomes absorbed into the instructional programs of tertiary schools, as nursing education is presently moving out of apprenticeship training in the teaching hospitals and into the Colleges of Advanced Education in Australia. This movement toward the progressive theoretizing of larger areas of life seems inevitable and irreversible. If it is, and if it is due to the epistemic qualities of the knowledge of the university disciplines, then theoretical knowledge is better as knowledge than practical knowledge. This should come as no surprise because the knowledge of the disciplines is merely those elements of practical knowledge that have become so epistemically refined and important they have become stored in symbols and taught and learned deliberately in schools. It would come as no surprise to one who bears in mind that the knowledge of the disciplines is already the content of the curriculum in tertiary schools and if the concern for the epistemic basis of formal education does not separate . . primary and secondary schools from tertiary schools. When one keeps in mind an image of all three levels of schooling as a unitary system, it becomes obvious that the essential characteristic of schools is the giving and receiving of instruction in theoretical knowledge.

On the other hand, the whole point of acquiring theoretical knowledge in schools is to enable one to enter into society and convert this into practical knowledge by engaging in the adult activities of one's society. The theoretics of formal education can be seen as an advanced form of socialization from a sociological point of view, particularly when the epistemic basis for the content of the curriculum is expressed in terms of the communities of critical experts in the arts, crafts, trades,

sports, professions and university disciplines and fields of study.

One might argue that this appeal to the experts in the ACTS and disciplines is merely a resort to common sense. If so, it is a return to common sense in the Husserlian spirit of a return to the things themselves. If one wants to begin a theory of knowledge that is not de-contextualized by abstracting it from historical, societal reality, one ought to start not merely with facts, as Dewey recommended, but with people who know things, i.e., with experts, particularly with those experts who have formed themselves into guilds for the discovery, preservation and diffusion of the practical or theoretical knowledge in a specific activity or domain. Within these communities of practitioners or investigators, there seem to be these three elements of knowledge: perceptual and conceptual awareness of the activities in the practice, or of the objects in the domain, plus some techniques, methods, standards of excellence and canons of inquiry that compel mutually enriching interaction between perception and conceptualization. Epistemologists and philosophers of science merely reify certain aspects of these three elements and decontextualize them to carry on arguments about which elements are most important, as in the "forms of knowledge" debate. What philosophy is, and what philosophers do, and can do, and should do, is not at issue, except to say that regardless of the epistemic characteristics reified, it involves a reductionism that is inappropriate for educative processes occurring in the unreduced, lived-world, unless the reifications of contrasting theories are combined so as to include all of the epistemic characteristics necessary to become aware of a specific activity or thing in the world.[8] The appeal to the knowledge of the experts, in the ACTS as well as the disciplines, is therefore an appeal to the knowledge and skills in their unreduced, holistic state as found in the activities of adults in society. If this is a return to common sense, then perhaps one should make the most of it.

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1. Jim Mackenzie, "Evers & Walker and Forms of Knowledge", Journal of Philosophy of Education, 19(1985) 199-209.

2. Quoting Paul Hirst, Knowledge and the Curriculum (London: Routledge and Kegan Paul, 1974) p. 140.

3. Mackenzie, p. 207.

4. Jane Roland Martin, "Needed: A New Paradigm for Liberal Education", in Philosophy and Education, ed. by Jonas F. Soltis (Chicago: University of Chicago Press, 1981) p. 47.

5. John Dewey, Philosophy of Education (Problems of Men) (Paterson, N.J.: Littlefield, Adams, & Co., 1961) p. 294. Emphasis his.

6. John Dewey, Democracy and Education (New York: The Free Press, 1961) p. 8.

7. He said, for example, "Modern Science accepts no proposition as self-evident but rests on the consensus of the community of scientific investigators as to what premises one may adopt for the sake of inquiry." Charles Sanders Peirce, "Questions Concerning Certain Faculties Claimed for Man", in Values in a Universe of Chance, ed. by Philip P. Wiener (Garden City, N.Y.: Doubleday, 1958) p. 17. This statement needs to be supported to apply it to the point in the text. He also said, "The very origin of the conception of reality shows that this conception essentially involves the notion of a C O M M U N I T Y, without definite limits, and capable of a definite increase in knowledge." "Some Consequences of Four Incapacities," ibid., p. 69. Emphasis his. This view of reality in connection with science depends upon "the result of investigation carried sufficiently far," and is explicated in these terms: "The opinion which is fated to be ultimately agreed to by all who investigate is what we mean by truth, and the object represented in this opinion is the real." "How to Make Our Ideas Clear," ibid., p. 133. A commentator explains Peirce's point: "The establishment

of scientific fact depends not merely on one but on a community of competent observers who check each other's conclusions and make individual contributions to the whole enterprise for future generations." Thomas S. Knight, Charles Peirce (New York: Washington Square Press, 1965) p. 31.

8. This point is indebted to the "multiple perspectives" concept applied to the consideration of knowledge in pedagogy by Maxine Greene, Teacher as Stranger (Belmont, Cal.: Wadsworth, 1973) p. 168.